does not represent the subject to which it refers. If the author of the manual under review will examine into the claims of the nomenclature he has so extensively quoted from this source, he will find that a great part of it has either no foundation in analytical work, or has been proposed without regard to priority. Such are *Dinoceras*, *Brontotheridæ*, *Pliohippus*, etc., etc. The erroneous figure of the skull of *Coryphodon* is copied, when a correct one could easily have been found. Further attention to this department will enable the author to do it justice in a future edition.

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GENERAL NOTES.

BOTANY.

FERTILIZATION OF FLOWERS BY HUMMING BIRDS.[1]—For several years some persons of this place have been watching the birds about flowers. They visit flowers for at least two objects, for insects and for nectar, and perhaps for pollen in some cases. Pollen grains have been found on the bill and feathers of the head of humming birds. These birds have been seen to frequent flowers of pelargoniums, fuchsias, trumpet-creepers, phloxes, verbenas, catmint, milkweed, tropæolums, honeysuckles, lilacs, morning-glories, cherry, wild balsams. I have no doubt they visit a great variety of other flowers which secrete honey in abundance. Mr. Osband visited trumpet-creepers, in flower, in bright days, and always saw birds. On one plant he saw eight birds at one time.

The pollen of fuchsias is sticky or in strings. Humming birds are the main visitors to the flowers. The calyx tube seems too long and narrow for most insects. Mr. Hollingsworth is very sure these birds visit the plant for nectar. Sometimes they pierce through the base of the calyx tube and take out the nectar. The student last named covered some flowers and found the stigmas were dusted with pollen without the aid of bees or birds. The ovaries also swelled as though forming seeds.

Mr. Wm. Snyder observed the fertilization of *Impatiens fulva*. The anthers form a covering over the pistil. He tied bags over young flower buds, also over flowers which had opened but before the stamens had disappeared. In both cases no good seeds were produced. Some he tied up and artificially crossed. The latter, without exception, matured fruit. In other cases he cut off all the petals of the flowers. He took down the signs. None of these set fruit. In other cases the nectar gland only was removed, with no fruit setting.

Sometimes he saw a large number of black bees at work, seemingly trying to get what exercise and nectar they could. They ran in and out many times, and hardly ever touched an anther or pistil. He could not see that the insects were of any use in fertilizing the flowers. Small wild bees behaved no better as far as carrying pollen was concerned. A common honey bee availed nothing in this direction. One humble bee hit pollen in

[1] Notes taken from papers of his young students by Prof. W. J. Beal.